MONTANA TEEN DRIVER CURRICULUM 2.0 GUIDE
Lesson Plan & Teacher Commentary

Module 3.2 – Managing Time and Space

Lesson Objective (from *Essential Knowledge and Skills Topics*):

11. Time and Space Management System Components

The student is expected to describe and demonstrate:

(a) the components of a space management system;
(b) the procedures for an orderly visual search pattern;
(c) changes to line of sight restrictions;
(d) changes to path of travel restrictions;
(e) the six zone locations;
(f) adjusting vehicle position to maximize lane positions;
(g) how to evaluate a gap for merging with traffic or crossing traffic lanes;
(h) how to evaluate and control vehicle space to the front;
(i) how to evaluate and control vehicle space to the sides;
(j) how to evaluate and control rear zone conditions; and
(k) appropriate communication techniques to inform other roadway users of driver actions.

12. Time and Space Management Strategies

The student is expected to:

(a) demonstrate an orderly visual search process;
(b) evaluate the projected target area for information that could affect speed, vehicle direction or driver communication;
(c) evaluate and respond to restrictions to the line of sight;
(d) evaluate and respond to restrictions to the path of travel;
(e) visually search areas for a safe response in the 20 to 30 second visual search range;
(f) visually search areas for a safe response in the 12-15 second visual search range;
(g) visually search areas for a safe response in the 4-6 second immediate response range;
(h) demonstrate adjusting lane positions and speed to control space around the vehicle;
(i) demonstrate selecting a gap in traffic for a safe merge or crossing traffic lanes;
(j) demonstrate appropriate communication prior to a speed or lane position adjustment;
(g) describe the dangers of improper signaling;

(k) evaluate and respond to traffic to the sides and rear of the vehicle;
(l) calculate distance traveled with various speeds; and
(m) identify and describe the vehicle control sequence of vision control, motion control, and steering control.

Materials Needed:

1. Module 3.2 PowerPoint Presentation
2. Module 3.2 Fact and Work Sheets, Pre-Drive Checklist (printed out)
3. Module 3.2 PEPs
4. Module 3.2 Teacher Commentary (printed out)

Module 3.2 Teacher Commentary

This teacher commentary can be used in conjunction with the PowerPoint presentation for this module. The module slide images are provided to allow you to connect the materials, data, and questions with the presentation.

Slide 2 – Two Objects – Same Space

The laws of physics say that two objects cannot occupy the same space simultaneously. That has a lot of implications for driving. Crashes are a result of two or more vehicles trying to occupy the same space at the same time.

So, what is the best way to minimize the chances of two cars or objects trying to occupy the same space at the same time?

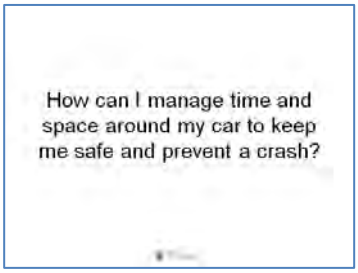
[Three images appear.]

Slides 3 and 4 – Sad Reminder of Mismanaged Space

Montanans have a constant reminder of the consequences of mismanaged space and mismanaged vehicle balance. Use this as an opportunity to remind students that driving is a serious task and that there is no reset button in this game of life.

Ask the student to consider this:

How can I manage time and space around my car to keep me safe and prevent a crash?



Slide 5 – Zone Control System for Space Management©

There are five different space management systems that can be used to teach driving.

These are examples of previous systems and not intended that all should be taught to the students. Too much information means too much confusion for the students. For the sake of consistency the decision to use one system—The Zone Control System—was made by the curriculum team. OPI has permission to use the ZCS so long as it is not altered or changed from the author's original language or intent.

The oldest is the Smith System

- **Aim high in steering**
- **Get the big picture**
- **Keep your eyes moving**
- **Leave yourself an out**
- **Make sure they see you**

SIPDE Used in Responsible Driving

- **SEARCH the roadway and the off-road areas for roadway, vehicle, and other user information that can help plan the path of travel at 20 to 30 seconds ahead of the vehicle.**
- **IDENTIFY objects or conditions that could threaten the intended path of travel. Is the risk situation, a potential or immediate threat for an unwanted consequence?**
- **PREDICT what threats or changes in conditions could increase or decrease the level of threat to the planned path of travel.**
- **DECIDE what speed control or lane position action would reduce the threat of a collision consequence.**
- **EXECUTE the decision by appropriate communication, followed by a speed and/or position adjustment**

IPDE Used in *Drive Right*

- **IDENTIFY problems to give meaning to what is seen. The sooner a potential or critical hazards in the roadway are identified, in the vehicle, or due to other users; the more time will be available to react safely to the critical hazard.**
- **PREDICT how the potential or immediate hazard might affect the intended path of travel.**
- **DECIDE upon a minimize, separate, or compromise maneuver to reduce the hazard critical to the path of travel.**
- **EXECUTE the decision with precision speed control, lane position and communication.**

SAFE Used in *License to Drive*

- **SCAN to gather as much information as possible about the complete driving scene around the vehicle.**
- **ASSESS potential threats in the driving environment.**
- **FIND a way out of the situation.**
- **EXECUTE the decision to avoid upcoming conflict by changing speed and/or changing direction.**

ABCs Used *in Drive Right* and Mottola's *Zone Control*

- **Alert switch is turned on by seeing a LOS POT blockage to your path of travel.**
- **Before acting, check other zones for options.**
- **Create time and space management, get the best speed, the best lane position, communicate.**
- **An open zone is a space where the vehicle can be placed without a restriction to the line of sight or intended path of travel.**
- **A closed zone is space is unavailable for vehicle placement due to a restriction in the line of sight or intended path of travel.**
- **A changing zone is a worsening condition, an open zone changing to closed zone, or a closed zone with an additional restriction.**
- **Reduced-risk decisions are performed by developing visual skills to make critical adjustments of speed and/or lane position into open space with adequate time for adjustments**

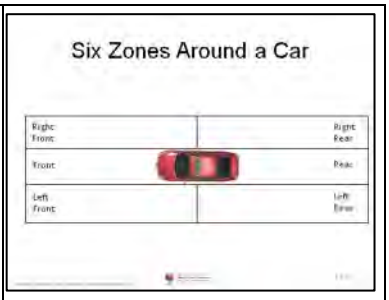
SEE Used in the ADTSEA and some *State Model Curriculum Guides*

Some states have created their own acronym for a space management system. The most common is SEE.

- **SEARCH the intended path of travel and space to the rear for problems and restrictions to the sightline or intended travel path.**
- **EVALUATE open spaces to front, side, and rear to determine reduced-risk adjustments for speed or lane position.**
- **EXECUTE reduced-risk adjustments by visually targeting new path of travel, visually check mirrors, give appropriate communication, adjust speed, then adjust lane position.**

Slide 6 – Six Zones Around a Car

The zone control system divides the space around a car into 6 zones as indicated on the PPT slide. You see that there are three in the front and three in the back.
The car is in the middle of those 6 zones and the driver manages the space the car is traveling into by determining if the space is open or closed or changing.
See the next slide for an explanation of open or closed.



Slide 7 – A Zone Can be Opened, Closed or Unstable

Open Closed demonstration

Go to the classroom door and open it. Ask the students the condition of the doorway. Ask what they can do with an open door.

Close the door and ask the same question. State the condition of the door and what they can do at that moment.

What happens when the door is closing or opening?
Hint: it is a unstable zone and therefore either prevents you from using it or it opens up and you can use it.

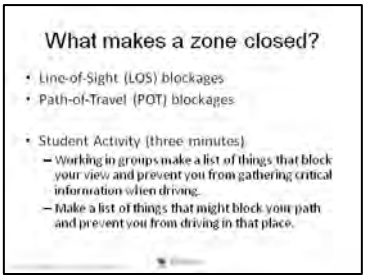
The three conditions of Zones

1. **Open**
2. **Closed**
3. **Unstable**

Slide 8 – What makes a zone closed?

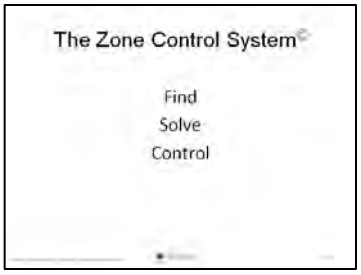
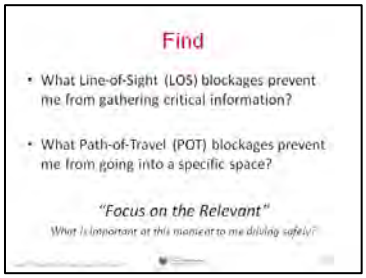
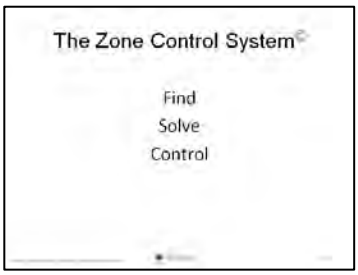
What is a line-of-sight blockage?
Any object (car, truck, plant, fence, house, etc.) that blocks my ability to gather critical information that I need to drive safely

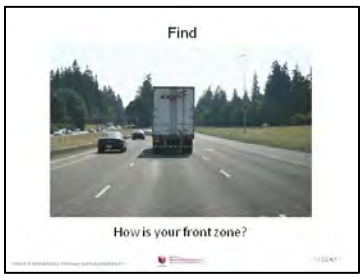
What is a path-of-travel blockage?
Anything in my path or near my path that blocks my ability to drive there.



Slide 9 – Searching Ranges

Target Area
15-20 Second Range
Four-Second Danger Zone

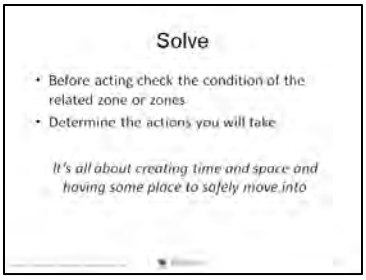
Slide 10 – The Zone Control System © **FIND** **SOLVE** **CONTROL**	
Slide 11 – Find **The first step in the Zone Control system is to use good searching strategies to find the LOS-POT blockages that will cause a zone closure.**	
Slides 12 – 22 - Student Activity **Over the next several slides the student is to search using the three searching ranges and identify the LOS and POT blockages they see in the photos.** **They can get pretty detailed but the important items for them to notice are those that will impact their path or ability to gather critical information.**	
Slide 13 – Find LOS and POT Blockages **POT blockages** • **The stopped cars in my lane.** • **The red traffic light.** • **The curb on the right.** • **The white barrier line on the left.** **LOS Blockages** • **The tree on the right.** • **The bus ahead and on the left.**	
Slide 14 – Find LOS and POT Blockages • **The right front zone is closed because of the construction barrels and uneven shoulder created by the construction.** • **The front zone is closed by the curve in the road and the construction barrier next to the back hoe creates a LOS blockage so we can't see through the curve.** • **The front zone has a LOS blockage created by the curve and the construction backhoe.** • **The front zone is unstable because we don't know how long the light has been green and therefore might change to red.**	

Slide 15 – Find – How is your front zone? **Front zone is blocked with both POT and LOS because of the truck.** **The open zone is the right front zone.** **This is getting ahead of ourselves but you might want to ask the following questions:** • **Did you see the cars coming onto the freeway on the right?** • **Do you think the truck is going to pull over to the right lane? Why or why not?** • **Is it a good idea to pass the truck on the right?** • **Trucks have an area around them called the "NO-Zone." What do you think that means?**	
Slide 16 – Find **You are about to pass this cyclist.** **Does he make your right front zone closed? Why or why not? Remember the definition of a closed zone.** **What about your left front zone? What happens to the roadway at the intersection?** **If you try to pass the cyclist at the intersection what happens to your space at the intersection?** **What happens to the roadway after the intersection?** **Where do you think the best place is to pass this cyclist?**	
Slide 17 – Find **Your right is closed by two people. Even though the pedestrian is crossing the street mid-block she still presents a closed right front zone. The cyclist also closes your right front zone.** **Your left front zone is open so you do have space to move there if you need. What other zone might be of concern to you if you were considering a lane change to make space?** **What does the wide solid white line mean for you on the right side of the road? Does it also close your right front zone?**	

Slide 18 – Find **LOS and POT**	
Slide 19 – Find **There are many LOS and POT blockages in this photo** **POT** **Stop sign** **Speed hump** **Car coming at you** **Intersection** **Parked bus on the other side of the intersection** **LOS** **Cars on your left** **Building on your right**	
Slides 20-22 – Find **Refer to questions on slides.**	  

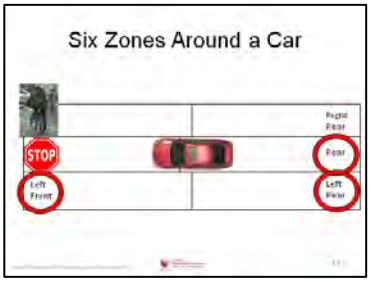
Slide 23 – Solve

The next step in the zone control system is to SOLVE for LOS POT blockages by checking the related zones. The related zones are those that are opposite the blocked or closed zone. We check those because we may need to move into those zones to create space between us and the blocked zone.



Slide 24 – Six Zones around a Car

If a zone is closed the driver should check the related zone or zones to make sure they have a place to go to create space.
If the front is closed by a stop sign then the driver would check the rear zone.
If the right front zone is closed by a bicyclist on then the driver would check actually two zones. The left front because it is opposite and the driver may need to move to LP 2 or 4 to create space and the left rear in case the driver needs to move to the left to avoid the cyclist .



Slide 25 – Solve: Line-of-Sight and Path-of-Travel Blockages

POT blockages

- **The stopped cars in my lane**
- **The red traffic light.**
- **The curb on the right**
- **The white barrier line on the left.**

LOS Blockages

- **The tree on the right**
- **The bus ahead and on the left**

Slide 26 – Solve: LOS and POT Blockages

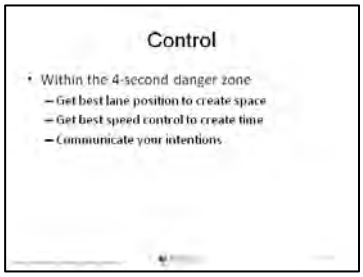
- **The right front zone is closed because of the construction barrels and uneven shoulder created by the construction.**
- **The front zone is closed by the curve in the road and the construction barrier next to the back hoe creates a LOS blockage so we can't see through the curve.**
- **The front zone has a LOS blockage created by the curve and the construction backhoe.**
- **The front zone is unstable because we don't know how long the light has been green and therefore might change to red.**

Slide 27 – Solve **The student should solve the blocked LOS and POT created by the truck by checking the rear zone, the right front zone and right rear zone. They may also want to check the left rear zone to look for an opportunity to move into the far left lane.** **The rear is closed, the right rear is closed and the right front is closing by the traffic about to come onto the free.**	
Slide 28 – Solve **You should check your rear zone to see if you have space to slow down.**	
Slide 29 – Solve **Your right is closed by two people. You need to check your rear zone in case you need to stop.** **You need to check your left front and your left rear to make sure you can move into LP 2 or make a move to LP 4.** **They are both open so you have the option to move to those lane positions.** **What else must you do to ensure that your left rear zone is open?** **Do an over-the-shoulder check to the left.**	
Slide 30 – Solve **LOS and POT**	

Slides 31-34 – Solve

Slide 35 - Control

The control piece of the zone control.



Slide 36 – Control

Look at the following slides

Slide 37 – Control: LOS and POT Blockages

LP 1, slow down, tap brakes

Slide 38 – Control: LOS and POT Blockages **LP 1, slow down, tap brakes but make sure the car in the rear zone completes the lane change before you slow down. Why do you think that's important?**	
Slide 39 – Control **You don't have adequate space to move to the left lane and cars are coming in on the right with someone passing you on the right. Best way to create space is to ease off the accelerator and to create space as the truck pulls away. You may also want to tap your brakes to indicate to the car in your rear zone that you are slowing some.**	
Slide 40 – Control **LP 1, slow down, and tap brakes. The roadway forces you to get closer to the bicyclist as it narrows at the intersection. To continue to try to pass the cyclist at that point puts you too close. Create space and give yourself time by slowing down, allowing the cyclist to continue through the intersection and use the road design on the other side to take you away from the cyclist.**	
Slide 41 – Control **Move to LP 2 foot off of accelerator (cover) and allow the hill to help you maintain speed—not increase speed. You could change lanes as well to create more space because your left rear zone is open.**	
Slide 42 – Control **LP 2 gives you the most space between the trucks. You may want to even move to LP 1 after the first truck on the right. When you have only one lane position option you must slow down because you have no way to create space. Tap brakes to indicate to the rear that you are slowing.**	

Slide 43 – Control **LP 3 to create space with the oncoming car, brake and brake lights to indicate slowing.**	
Slide 44 – Control **LP 2 gives you space from the parked cars since there are no oncoming cars you can avoid conflict with the parked cars by being in LP 2. If cars were coming toward you what happens to your lane position options? Foot off gas to begin slowing for light ahead and brake lights indicated by the yellow van. Tap brakes, monitor rear to make sure people behind are slowing.**	
Slide 45 – Control **Setting up for a left turn on a one way street, LP 2, slowing and foot on brake to stop the car.**	
Slide 46 – Control **Your lane ends so you will need to move to the right lane. Since the truck blocks your lane you need to move to LP 3 and initiate your lane change, you need to slow down because of the POT blockage and you need to signal to the right and tap your brakes at the same time to indicate your intentions.**	

Slide 47 – Putting it all together

Remember that the Zone Control System works because it is a continuous process that involves searching and scanning to find the closed zones, solving the blockage by checking related zones and then determining the best lane position, the best speed control and the best communication.

Updated April 24, 2013